and the most obvious and common distinctions of colouring. Without entering into any theory on the subject, we say that blue, red, and yellow are *primitive* colours—that is, that they are self-created colours, because the compounding together of no other colours will produce them. Green, orange, and purple are secondary colours, and result from the admixture of the three primitive colours. The tertiary mixtures, such as olive, brown, slate, are formed by the union of the secondary colours themselves, or the colours which make them, in the same proportions. The two colours which represent the extremes of heat and cold are *red* and *blue*. Yellow stands midway between them, and by itself is neither positively warm nor cold, though it rather more inclines to warmth than coldness, as we see illustrated in the green colours. As greens contain blue, they are cold-looking, as yellow warm. Mixed colours, in proportion as they contain red, incline to warmth—as they contain blue, to coldness."

With this and our repeated recommendation to the reading, we conclude for the present, awaiting anxiously, however, the development of that frame of mind in our circle of the craft which predisposes to a profitable study.

CURVES OF FANCY EQUATED.

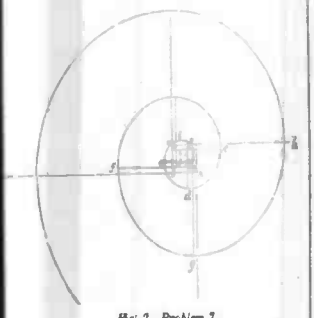

Fig. 2, Problem 7.

Problem VII.—*With compasses to describe spirals from centres, variable under a given law.*

First, let a trace 1, 2, 3, 4, 5, 6, &c., be drawn round any regular polygon 1 and produce the lines 1 2, 2 3, 3 4, &c.

With 2 as centre, and distance 2 1, describe the arc 1 *a*; with 3 as centre, and distance 3 *a*, describe the arc *a b*; and with 4 as centre, and distance 4 *b*, describe the arc *b c*; describe *c d*, with 5 as centre, and in this manner the spiral 1, *a*, *b*, *c*, *d*, &c., may be traced.

Madrid as a City.—I have visited most of the principal capitals of the world; but upon the whole, none has ever so interested me as this city of Madrid, in which I now found myself. I will not dwell upon its streets, its edifices, its public squares, its fountains, though some of these are remarkable enough; but Petersburg has finer streets, Paris and Edinburgh more stately edifices, London far nobler squares, whilst Shiraz can boast of more costly fountains, though not cooler waters. But the population! Within a mud-wall scarcely one league and a half in circuit, are contained two hundred thousand human beings, certainly forming the most extraordinary vital mass to be found in the entire world; and be it always remembered that this mass is strictly Spanish. The population of Constantinople is extraordinary enough, but to form it twenty nations have contributed—Greeks, Armenians, Persians, Poles, Jews (the latter, by the bye, of Spanish origin, and speaking among themselves the old Spanish language); but the huge population of Madrid, with the exception of a sprinkling of foreigners, chiefly French tailors, glove-makers, and perruquiers, is strictly Spanish, though a considerable portion are not natives of the place. Here are no colonies of Germans, as at St. Petersburg; no English factories, as at Lisbon; no multitudes of insolent Yankees lounging through the streets, as at the Havanna, with an air which seems to say, The land is our own whenever we choose to take it; but a population which, however strange and wild, and composed of various elements, is Spanish, and will remain so as long as the city itself shall exist.—*Borrow's The Bible in Spain.*

OPENING OF TUMULI IN CLEVELAND.

An interesting event has just "come off" on the opening and exploring of tumuli at "Eaton Nab," in Cleveland. The working in the first of the two was interrupted by a little perilousness in the progress; but the eastern tumulus, distant from the other about forty yards, proved a rich reward to the adventurers. "It was found to differ widely from the former one in the materials of which it was composed, consisting chiefly of white loamy soil. After three hours' labour, they approached its centre, and in despair began to undermine the earth before they abandoned their researches, when one of the workmen struck his spade at what he considered to be a stone, and on repeating his ill-directed blow, he exclaimed, "There's a bit a summit wi' sum carved wark on't," and was about to demolish the precious relic, when Mr. J. W. Ord, by whose invitation the party had assembled themselves, immediately arrested the arm of the destroyer. He then took the place of the workman, and with a small knife carefully cut away the soil, and on removing a flat stone which was placed on it, presented to the company a splendid Roman urn, containing a great quantity of human bones, several portions of the skull, small bones, and teeth; the latter were in excellent preservation, after being imbedded in the earth upwards of 2,000 years. It was in height about 16 inches by 12 inches in diameter, composed of burnt clay, upwards of half an inch in thickness, and in colour resembling a common tile; it had a broad rim round the top, and its sides were marked in a curious manner by the point of some sharp instrument. On the under part of the stone which covered the urn was a rude device representing what was considered to be a shield of grotesque character. It may be added that in turning over the mound innumerable small heaps of burnt wood, or charcoal, which, no doubt, had formed funeral piles for consuming the remains of the dead, were thrown up. Some fifty yards due north of the tumuli is what has hitherto been considered a Saxon encampment, of a semicircular form and of considerable extent. The result of these investigations proves, that though the Saxons may have occupied this position, the Romans had also posted themselves at, or at no great distance from this place of rendezvous."—*Great Northern Advertiser.*

CHIMNEYS.

It is not easy to determine the precise period when chimneys first came into use. The writers of the fourteenth century seem either to have been unacquainted with them, or to have considered them as the newest invention of luxury. The curfew-bell of the English, and the *couvrefeu* of the French, seem to intimate that the people made fires in their houses in a hole or pit in the centre of the floor, under an opening formed in the roof; and when the fire was burnt out, or the family went to bed at night, the hole was shut by a cover of wood. In the year 1200, chimneys were scarcely known in England; one only was allowed in a religious house, one in a manor-house, and one in the great hall of a castle or lord's house; but in other houses the smoke found its way out as it could. In Henry the Eighth's reign the University at Oxford had no fire allowed; for it is mentioned, that after the students had supped, having no fire in winter, they were obliged to take a good run for half an hour, to get heat in their feet before they retired to bed. Hollinshed, in the reign of Elizabeth, describes the rudeness of the preceding generation in the arts of life: there were, says he, very few chimneys; even in capital towns the fire was laid to the wall, and the smoke issued out at the roof, door, or window. The houses were wattled and plastered over with clay, and all the furniture and utensils were of wood. In the year 1589, a tax of two shillings was laid on chimneys.

Damp in Walls.—An easy and efficacious plan for preventing the effect of damp walls upon paper-hangings has been used with great success. It consists of lining the wall, or the damp part of it, with sheet lead, rolled very thin; this is fastened up with small copper nails, which not being subject to rust, are very durable, and the walls may be immediately covered with the paper.

THE LAKE OF MŒRIS.

A French engineer, in the service of the Pacha of Egypt, has to all appearance succeeded in identifying the site of this famous lake. The father of history, Herodotus, had been suspected of much exaggeration in reference to this extraordinary work of art, and it does seem probable he has been mistead or misled in assigning to it a boundary or embankment of from 300 to 400 miles circuit. It would appear, however, that the present discovery would justify the assumption of its having been at least 70 miles long and 5 or 6 miles broad!

M. Linant, the engineer, has traced out (being led to it by an accidental discovery) the great dam of this "monster" reservoir; it inclosed an area of 150 square miles, and had a base of about 200 feet. Herodotus stated the lake to have been 300 feet deep, and to have had two pyramids standing within its ocean, and washed by its waters. At present the evidence makes it an elevation of not more than 30 feet of the dam above the exterior, and only 7 feet in the interior, but this last is to be accounted for by the deposit of ages from the waters of the lake. It will be understood that there is no water now lying in the tract; but three grand steps or platforms in the valley of Fayûm, six miles from the Nile, are the relics of this once gigantic labour of the marvellous people of Egypt.

Although something must be put to the account of a rather vain passion of eulogy in the following lines, yet, as we are not too frequently treated to the rhymester's flights in the *rarney* of architecture,—perhaps our extract from the Scottish Muse may obtain a tolerant reception.

SONG—THE GEM O' EDINA.

INSCRIBED TO MR. G. KEMP, ARCHITECT FOR THE SCOTT MONUMENT.

By Alex. M'Laggan.

Hail Scotland! my honour'd, my auld-farrant mither!
I ken you rejoice when true hearts meet thegither;
And there's nae son o'thine this night, I'll be sworn,
Whase saul doons nae glow as he tooms his fu' horn,
When the proud toast is "Kemp!" for the glorious gem
Which his genius has set in thy chaste diadem!
Lo! there's grandeur, and beauty, and poetry blent,
In the gem o' Edina—the Scott Monument!

When with rapture we gaze on its beauties so rare,
We but think that the hame o' the Graces is there!
Whilst fond fancy fashions the fabric so fair
To a grand epic rear'd in the sweet sunny air.
We are proud of thee, Kemp, and long may thy name
Flourish green 'mang the leaves o' the garland o' Fame.
Then hurrah for the grandeur and beauty rich blent
In the gem o' Edina—the Scott Monument!

Though Fortune for favours could ne'er claim thy thanks,
More glory is thine that you rose from the ranks,
And the light o' thy genius out-dazzles by far
A' the gowd o' the "Garter" or blaze o' the "Star."
Lo! the eagle will soar, and in Heaven be heard
Albeit the bare rock be the bield of the bird.
Then hurrah for the grandeur and beauty that's blent
In the gem o' Edina—the Scott Monument!

My laigh-fleein' Muse aft sows in a pet
That the feck o' mankind are a fause fickle set,
Whilst her rustic harp whispers "Ye roose up sic things,
Ye but anger the gods, man, an' spoil a' my strings."
But oh! when she meets wi' blythe Friendship and thee,
How the fire o' her saul lights up life in her ee!
As proudly she cheers, at the top o' her bent,
"The gem o' Edina—the Scott Monument!"

Auld Reekie may weel boast her palaces braw,
But this last happy hit puts the cape-stane on a',
Hath! ye corcumbs o' art, hearth in canvas and stane,
A' ye learn'd in nonsense, ill-willie and vain,
Banish pride and conceit, before ye attempt
To cope wi' the worth or the gem o' Kemp!
Then wi' three hearty cheers let the welkin be rent
To the gem o' Edina—the Scott Monument!

Cheltenham.—A new Baptist Chapel to accommodate 2,000 persons has been just commenced here. Mrs. Gardner, the lady of the manor, has given 1,000*l.* towards it.

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